

Head deep coppery with greenish lustre and paler yellow brown mouth-parts; eyes widely separated, area between with a slight median depression; coarsely punctate, the punctures tending to be in lines radiating from the middle depression, on occiput smoother. Antennae (incomplete) with the five basal joints pale, distal joints darkened and wider. Prothorax not quite a third wider than long with angulate margin and a depression on either side below the middle; on either side of this depression a smooth roundish area without punctures, punctation coarse but not very dense elsewhere; surface very shiny, greenish or coppery. Elytra lustrous, the humeri prominent, and a suleus running down from within the humerus to below the basal callosity. Punctation coarse, confused and not very dense in basal half, becoming striate towards the apex. Body beneath coppery, abdomen and legs yellow brown with the apices of the femora and the last tarsal joints darker; tibiae shallowly grooved. All femora weakly toothed. Length 4 mm.; width 1.7 mm.

Type, male, Museum of Comparative Zoology Type No. 27361.

Type locality.—El Yunque, ca. 3,000 ft. altitude, Puerto Rico, collected in May 1938 by P. J. Darlington.

Remarks.—Although no female has been examined, it is probable that it will be found to be larger and with warty elytral elevations such as occur in related species of *Altharivus*. This species is larger and darker than *A. meliae*, which also occurs in Puerto Rico, and has less dense punctation and an angulate, not toothed prothorax. It differs from all the other coppery or aeneous West Indian species thus far described in the depressions on the prothorax. A similar sort of depression occurs in the small pale yellow brown species, *A. puertoricensis*.

THREE NEW SPECIES OF NEOHAEMATOPINUS (Anoplura, Haematopinidae)

BY G. J. RUBIN

Department of Entomology, Cornell University

Enderlein (1904) divided the family Haematopinidae into three subfamilies; Haematopininae, Trichaulinae and Eubaematopininae. Ewing (1929) divides this family into the six subfamilies Haematopininae, Enderleinellinae, Hybophthirinae, Linognathinae and Neolinognathinae and places the genus *Neohaematopinus* in the subfamily Hoplopleurinae.

Specimens of *Neohaematopinus* were sent to Dr. Robert Matheson of Cornell University by Robert Traub and were loaned for study. These specimens are all closely related to

Neohaematopinus laeviusculus (Grube) and are here described as new species.

***Neohaematopinus traubi*, new species**

Female (Fig. 3). Stout bodied species; length 2.1-2.7 mm., average length 2.5 mm. Head very blunt in front with a blunt spine on the pre-antennal region. Antennae close to anterior margin of head. Postantennal angles almost absent, and sides of head nearly parallel. Antenna without a modified seta on the first segment.

Thorax about as long as head; thoracic spiracles small; sternal plate one and one half times as wide as long (Fig. 6) with an anterior and posterior median prolongation. First pair of legs about half length of posterior pair.

Ninth tergite and genital plate of abdomen well developed; all other tergal and sternal plates lacking. Second to seventh pleural plates each with posterior angles prolonged into long points, and the posterior margins with 4 to 6 setae. Seventh pleural plate as large as second, eighth small and bearing three long setae. Genital plate (Fig. 9) almost square in outline and heavily chitinized. Three rows of setae to each normal abdominal segment, 25 to 30 setae to a row extending entirely across abdomen.

Male. Length 1.65-1.8 mm., average 1.7 mm. Antenna (Fig. 4) with third segment bearing a short blunt seta. Tergal and sternal plates of abdomen narrow, and second tergal plate almost vestigial except for lateral remnants. Rows of setae arranged both dorsally and ventrally in median and lateral groups, the dorsal median groups with 25 setae and lateral groups with 5 to 6 normal setae. The ventral median groups have 10 to 13 setae, and the lateral groups 4 to 5 fine setae.

Genitalia (Fig. 13) with the basal plate short and moderately broad; parameres shorter than basal plate, heavy and broad posteriorly with lateral posterior prolongations. The parameres enclose a U-shaped endomeral piece, a circular penis, and pseudopenis. The latter broadly V-shaped, with arms expanded and slightly serrate laterally.

Holotype: Female; paratypes, 11 females and 8 males. Host, *Citellus adocetus* (Merriam); collected at Michoacan, Mexico, August 3, 1941, by Robert Traub. Type and 4 paratypes in the United States National Museum (Cat. No. 57684) and paratypes in the collection of the Department of Entomology, Cornell University.

According to Ewing (1929) *N. traubi* would not fall in *Neohaematopinus* but probably in *Ferrisella* Ewing. This separation would be made on the basis of the three rows of setae on each abdominal segment. According to the description of the genus *Neohaematopinus* Mjöberg by Ferris (1923) there are usually two rows of setae but exceptionally three. Because of the general similarity of *N. traubi* to other species in the genus *Neohaematopinus* I feel that it belongs here.

Neohaematopinus mathesoni, new species

Female (Fig. 1). Length 1.8-2.3 mm., average length 2.1 mm. Head acutely rounded in front with the antennae set well back from apex. Blunt spine on preantennal region absent; antenna without modified setae on first segment. Postantennal angles broadly rounded, and the sides of head tend to converge posteriorly.

Thorax not as long as head; the sternal plate (Fig. 8) roughly circular, almost as long as wide; the posterior median point slight and the postero-lateral corners prolonged. Thoracic spiracles much larger than in *N. traubi*. First pair of legs more than half as long as posterior pair.

Abdomen with tergal and sternal plates lacking except for the genital plate and ninth tergite. Two rows of setae to each normal abdominal segment arranged in four groups; the dorsal group contains from 7 to 10 setae, the dorsal lateral group has about 4 setae. The ventral group contains from 6 to 10 setae, and the ventral lateral group has from 2 to 3 setae. Lateral margins of genital plate (Fig. 10) produced posteriorly and a clump of 6 fine setae on its middle. Second to sixth pleural plates normal, seventh and eighth reduced. Posterior margins with 2 to 3 normal setae and eighth with 2 long setae.

Male. Length 1.5-1.6 mm., average 1.54 mm. Antenna with third segment bearing a short blunt seta.

Tergal and sternal plates of abdomen narrow. Lateral ends of second tergal plate rounded posteriorly and 4 heavy spines on these lobes. Rows of setae arranged both dorsally and ventrally in median and lateral groups; dorsal groups with about 9 setae, the lateral groups with 3. Ventral groups with about 6 setae, the lateral groups usually with 4.

Genitalia (Fig. 12) with basal plate short and not very broad; parameres nearly as long as basal plate, heavy, widening posteriorly then coming to a blunt point. The parameres enclose a U-shaped endomeral piece, the penis, which is almost cylindrical, and the pseudopenis which is straight and serrate externally.

Holotype. Female: paratypes, 5 females and 4 males. Host, *Citellus v. couchi* (Baird): collected at Nuevo Leon, Mexico, August 12, 1938, by H. Hoogstraal. Type and 2 paratypes in the United States National Museum (Cat. No. 57685) and paratypes in the collection of the Department of Entomology, Cornell University.

Neohaematopinus patiki, new species

Female (Fig. 2). A small species; length 1.3-1.7 mm., average 1.6 mm. Head bluntly rounded in front with a blunt spine on anterior margin of head. Postantennal angles almost absent, and sides of head nearly parallel. Antenna without a modified setae on first segment.

Thorax as long or longer than head; thoracic spiracles small. Sternal plate (Fig. 7) longer than wide, lacking the anterior median prolongation and with a slight posterior median prolongation. First pair of legs small but more than half the length of last pair of legs.

Abdomen with the ninth tergite, genital plate (Fig. 11) and vestiges of second and third sternal and tergal plates present. Pleural plates 7 and 8 vestigial; posterior angles of other pleural plates prolonged slightly or not at all, and none of the posterior margins with more than two setae. Two rows of setae for the typical abdominal segment extending completely across abdomen, and about 25 setae to a row. Posterior border of genital plate directed laterally and anteriorly.

Holotype: Female; paratype, 11 females. Host, *Citellus* sp. subgenus *Ammospermophilus*; collected at Delta, Utah, April 27, 1938, by Nual Walter. Type and 3 paratypes in the United States National Museum (Cat. No. 57686), and paratypes in the collection of the Department of Entomology, Cornell University.

The following key will aid in differentiating the species described here and two other closely related species of *Neohacmatopinus*.

1. Abdominal rows of setae extending entirely across abdomen of female 2
 Abdominal rows of setae not extending entirely across abdomen of female; setae in dorsal and ventral median groups and dorsal and ventral lateral groups *mathesoni*, n. sp.
2. Thoracic spiracles small, about one-fourth length of second coxa 3
 Thoracic spiracles large and prominent, about half length of second coxa *marmotae* (Ferris)
3. Typical abdominal segment with only two rows of spines; sternal plate with only posterior median prolongation 4
 Typical abdominal segment with three rows of spines; sternal plate with an anterior median prolongation and posterior median prolongation *traubi*, n. sp.
4. Head acutely rounded in front; sternal plate of thorax with a distinct posterior median prolongation, the plate as long as wide; only vestiges of second abdominal tergal and sternal plates present *lacriuseculus* (Grube)
 Head bluntly rounded in front; sternal plate of the thorax with but a slight posterior median prolongation, the plate longer than wide; vestiges of second and third tergal and sternal plates present *patiki*, n. sp.

REFERENCES

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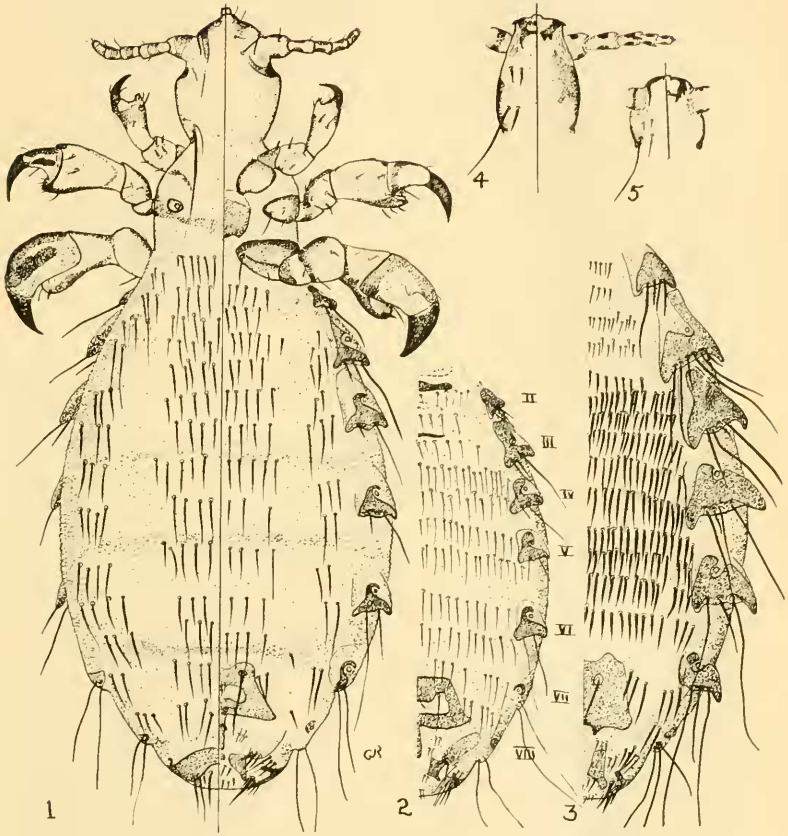


Fig.1.—*N. mathesoni*, ♀, right half ventral view, left half dorsal view; 2.—*N. patiki*, ventral view of abdomen; 3.—*N. traubi*, ventral view of abdomen; 4.—*N. traubi*, head of ♂; 5.—*N. patiki*, head of ♀.
 Abbr. *Bp*, basal plate; *E*, endomerical piece; *P*, penis; *Pa*, paramere; *Ps*, pseudopenis; *I-VIII*, pleural plates.

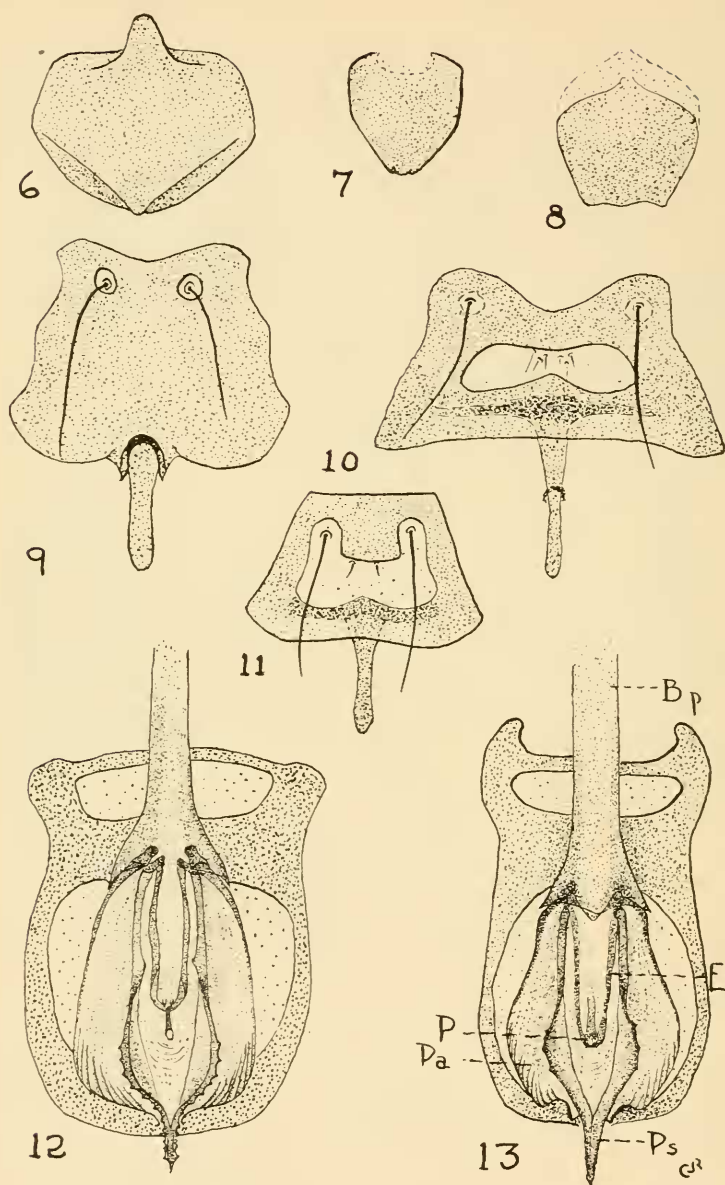


Fig. 6.—*N. traubi*, thoracic sternal plate; 7.—*N. patiki*, thoracic sternal plate; 8.—*N. mathesoni*, thoracic sternal plate; 9.—*N. traubi*, ♀ genital plate; 10.—*N. mathesoni*, ♀ genital plate; 11.—*N. patiki*, ♀ genital plate; 12.—*N. mathesoni*, ♂ genital apparatus; 13.—*N. traubi*, ♂ genital apparatus.